



Attorney's Docket 263/124

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **TERUHIRO YAMADA et al.**

Application Serial No.: **09/823,243**

Group No. **2152**

Filed: **March 30, 2001**

Examiner:

For: **INFORMATION RETRIEVAL APPARATUS AND METHOD USING  
REGIONAL INFORMATION**

COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

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**TRANSMITTAL OF SUBSTITUTE SPECIFICATION (37 C.F.R. § 1.125)**

1. Enclosed is a substitute specification for the originally filed specification in this application.
2. *(complete the following applicable item)*  
☐ This substitute specification is submitted, in response to a requirement by the Examiner.  

**OR**

☒ This substitute specification is being voluntarily submitted, in order to facilitate the processing of the application.
3. Also enclosed is a marked-up copy of the substitute specification showing the matter being added to and the matter being deleted from the specification.
4. Accompanying this transmittal is a statement, as required by 37 C.F.R. § 1.125, that the substitute specification transmitted herewith contains no new matter.

Respectfully submitted,

LYON & LYON LLP

Dated: March 5, 2002

By

ROBERT E. LYON  
Reg. No. 24,171



**22249**

PATENT TRADEMARK OFFICE

LYON & LYON LLP  
633 West Fifth Street, Suite 4700  
Los Angeles, California 90071-2066  
(213) 489-1600

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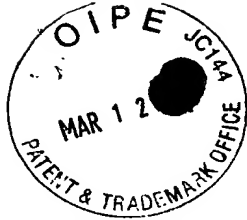
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By

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**STATEMENT THAT SUBSTITUTE SPECIFICATION  
CONTAINS NO NEW MATTER (37 C.F.R. § 1.125)**

**15. Identification of Person Making This Statement**

**ROBERT E. LYON, ESQ.  
LYON & LYON LLP  
633 West Sixth Street, Suite 4700  
Los Angeles, California 90071-2066**

The person making this statement is:

*(complete applicable item)*

- ☐ the inventor in this application.  
☒ the attorney in this application, Registration Number 24,171.  
☐ other \_\_\_\_\_.

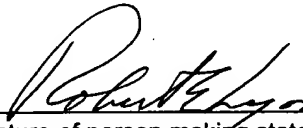
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I hereby state that the accompanying substitute specification contains no new matter over that contained in the above-identified application originally filed.

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Dated: March 5, 2002

  
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**INFORMATION RETRIEVAL APPARATUS AND  
METHOD USING REGIONAL INFORMATION**

**BACKGROUND OF THE INVENTION**

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1. Field of the Invention

- 5 **[0001]** The present invention relates to an information retrieval technique, and particularly relates to an information retrieval apparatus and method and can apply to limited geographical regions to be searched. It also relates to an information retrieval technique by which personal, lifestyle information related to specific regions can be searched and retrieved.

10 2. Description of the Related Art

**[0002]** The World Wide Web is becoming an indispensable means for providing and retrieving information in the Internet. With an explosive growth of Web sites, the amount of offered information is increasing rapidly, and it is becoming difficult to find really necessary information in a short time.

- 15 **[0003]** Recently, a mechanism using a search robot is used with portal Web sites for information retrieval. The robot visits many Web sites periodically and automatically extracts key words from Web pages so that users can efficiently search the Web sites for information using selected key words.

- [0004]** Generally, the robot chooses specific words from Web pages as the  
20 key words to be used. The specificity of this key word selection does not allow

ambiguity in key word usage, which can unnecessarily and perhaps unknowingly fail to retrieve valuable information of a related nature.

**[0005]** For instance, when a user searches for a wine shop in Shinjuku, "Shinjuku" and "wine" may be used for search terms, and as a logical  
5 multiplication of these terms, an AND condition is set as the boolean query expression. In this case, if a wine shop exists in nearby Shibuya, the shop will not normally be found in the search. However, the user may not mind visiting a shop in Shibuya, considering there is a relatively short distance between Shinjuku and Shibuya. Such ambiguous information does not meet the specific  
10 boolean expression and is overlooked in the search.

**[0006]** As another example, when a user searches for a Chinese restaurant in Yokohama, "Yokohama" and "Chinese restaurant" may be used as the search terms, and an AND condition of these terms is set as a query expression. In this case, if a restaurant has a Web page saying, "Our  
15 restaurant is the most popular Chinese restaurant in China Town", the restaurant is not found in the search because "Yokohama" is not included in the description. It is possible that the user means China Town rather than Yokohama. This kind of problem is not inherent in the search robot mechanism, but the same result could occur in a search engine site where an operator  
20 registers key words by hand.

[0007] Information services, such as search engines and the Yellow Pages, are in wide use in the Internet; and, Web pages of a company, a store, or a public facility can be browsed by a personal computer at home or by mobile phone. On the Internet, emphasis has been made to put on worldwide  
5 information which can be browsed by a personal computer; however, recently, interest has developed in finding only local or regional information. For instance, a local supermarket may offer information about today's sale items to local residents via the Internet. Such a local information service may increase in the future. Mobile phones and PDA's are in common use and it can be  
10 expected that regional information, such as a clinic, a school, or a post office, might be stored and accessed electronically by a portable terminal.

[0008] Although a user can store his lifestyle information of a local nature in a personal computer, a mobile phone, or a PDA, if the user moves his/her residence, the stored lifestyle information may become meaningless. In  
15 addition, when the user travels or goes on business, the stored local information becomes useless. It is a time-consuming job for the user to search again similar lifestyle information when his/her residence changes. It is also troublesome for the user to search local information fit to his/her preference or needs when he/she travels on vacation or on business or his/her living place  
20 changes.

## SUMMARY OF THE INVENTION

**[0009]** An object of the invention is to provide an information retrieval technology by which ambiguity in information retrieval can be utilized, particularly regarding a place name. Another object of the present invention is  
5 to provide an information retrieval technology by which regional lifestyle information can be obtained effectively.

**[0010]** According to one aspect of the present invention, an information retrieval apparatus includes an input unit which receives a key word specifically describing information to be searched and a place name to apply a regional  
10 restriction to the searching, a selection unit which selects a regional name that is judged to be within a reasonable distance from the place name on the basis of a predefined criteria, a setting unit which sets a logical AND or a logical OR in the place name and the selected regional area, and the key word, all as the query expression, and a search unit which searches the database using the  
15 query expression. The word "region" may mean a place, locality, or geographical area.

**[0011]** Although the regional name that is used for searching is also a key word in a broad sense, in this specification, it refers to a specific expression or word describing a broader concept corresponding to the information to be  
20 searched and it differs from the place name. The place name is a search term as well as the key word.

**[0012]** In this system, when a user searches for information, he/she enters a key word and a place name. Next, the selection unit selects a regional name that is judged to be within a reasonably accessible area on the basis of a predefined criteria. The judgment criteria may be, for instance, whether it is  
5 within 20 minutes of the user by rail, by foot, or by other transit means.

**[0013]** Another example of the judgment criteria may be whether it is within a 10-kilometer radius. In order to make this judgment, the apparatus may have a table which stores a place name and location information for a region indicated by the place name. The selection unit may choose from said table a place  
10 name in a region from which the place name is within a predefined distance by using the location table. The location table may be, for example, the latitude and longitude of the indicated place name. Since the region may stretch to some extent, a standard point to define the location may be used, for instance, the center of the region.

**[0014]** According to another aspect of the present invention, an information retrieval apparatus would include an input unit which receives a search term from a user, an extraction unit which extracts a place name from the search term, a selection unit which selects a regional name that is judged to be within a reasonable area of the region on the basis of a predefined criteria, a setting unit  
20 which sets a query expression, including a logical addition of the extracted place name and the selected place name, and a search unit which searches the database by using the query expression.

**[0015]** The input unit may also provide personal information of the user, and the selection unit may select the place name after defining or modifying the regional area using the personal information. For instance, personal information may relate to a range of activities, a behavioral pattern, or a variety of activities or interests of the user. If the user is a old person or a child, the geographical scope could be restricted. In such case, the reasonable area could be narrowed or restricted to an area along the route of a train or a bus the user usually takes.

**[0016]** According to another aspect of the present invention, an information retrieval method includes obtaining information related to the location of a user, extracting an item of regional lifestyle information within the location, obtaining information related to a destination of the user, and searching the regional lifestyle information at the destination using the extracted information.

**[0017]** The user location and the destination include where a user lives, stays or commonly goes and includes work place, residence, and the destination of travel on business or on vacation.

**[0018]** According to still another aspect of the present invention, an information retrieval method includes storing an item of regional lifestyle information, obtaining information related to a destination of a user, and searching regional lifestyle information at the destination by using the stored item without receiving an input of the item from the user.



**[0019]** According to still another aspect of the present invention, an information retrieval method includes storing personal attributes of a user, obtaining information related to a destination of the user, and searching regional lifestyle information at the destination by using the personal attributes without receiving a search item from the user. The personal attribute may be an objective attribute, such as age, sex, address, profession, or may be a subjective attribute, such as preferences or hobbies.

**[0020]** According to still another aspect of the present invention, an information retrieval apparatus includes a lifestyle information storage unit for each user, a destination unit which obtains information related to a destination of a user, a search unit which searches for regional lifestyle information at the destination by using the stored item, and a unit which transmits the lifestyle information to a terminal of the user.

**[0021]** According to still another aspect of the present invention, a terminal includes a search history storage unit which stores a history of data searched by a user, a location unit which obtains information related to a location of the user, an extraction unit which extracts an item of regional lifestyle information at the location based on the history, and a communication unit which transmits information related to a destination of the user and the extracted item to a server, and receives regional lifestyle information of the destination that is searched by the server.

**[0022]**

**[0023]** This summary of the invention does not necessarily describe all necessary features so that the invention may also be a sub-combination of these described features.

5

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0024]** Fig. 1 is a block diagram of an information retrieval apparatus according to one embodiment of this invention.

**[0025]** Fig. 2 shows the internal data structure of a personal information table.

**[0026]** Fig. 3 shows the internal data structure of a place name table.

10 **[0027]** Fig. 4 is another internal data structure of a place name table.

**[0028]** Fig. 5 shows yet another internal data structure of a place name table.

**[0029]** Fig. 6 is a block diagram of an information retrieval system according to a second embodiment.

**[0030]** Fig. 7 is a block diagram of a user terminal and a search server.

15 **[0031]** Fig. 8 shows an example of a screen display of a user terminal.

**[0032]** Fig. 9 shows a data file that stores items of a user's lifestyle information.

**[0033]** Fig. 10 shows a search result of lifestyle information at a new address.

**[0034]** Fig. 11 is a flow chart of the information retrieval procedure of a  
5 search server.

**[0035]** Fig. 12 is a block diagram of a user terminal and a search server according to a third embodiment.

**[0036]** Fig. 13 shows an example of lifestyle information displayed on a user terminal.

10

## DETAILED DESCRIPTION OF THE INVENTION

**[0037]** The invention will now be described on the basis of the preferred embodiments, which do not intend to limit the scope of the present invention, but exemplify the invention. All of the features and the combinations thereof described in the embodiment are not necessarily essential to the invention.

15 **[0038]** Fig. 1 shows a block diagram of an information retrieval apparatus 10 according to a first embodiment of the present invention. The structure of the apparatus 10 may be implemented with a CPU, memory and a program with a regional information retrieval function loaded in the memory. In the figure, the

blocks are not divided in terms of hardware and/or software component, but in terms of function. Those skilled in the art can therefore understand that various combinations of hardware and software components can achieve these functions. In particular, the software components in apparatus 10 are  
5 implemented, for example, in a manner such that the regional information retrieval function that characterizes the present invention is embedded into a main function for Web browsing. Therefore, it is herein assumed that the information retrieval is performed by accessing the Web.

**[0039]** Input unit 12 obtains data from a user using a keyboard, mouse, or  
10 other external equipment. Here, the data would be search terms, such as a user's personal information. The search term is forwarded to a place name extraction unit 14, and the personal information is stored into a personal information table 24.

**[0040]** Fig. 2 shows the internal data structure of the personal information  
15 table 24. The personal information table 24 includes a user field 240, an age field 242, a means of usual transportation field 244, and a nearest station field 246. For example, it is assumed that user A is 26 years old and usually travels from Nakano station by train. Users B and D are relatively old and user D usually travels by car. Such personal information is utilized for defining  
20 a reasonable search zone or area for each user, as described later.

**[0041]** Now assume that the input data is not specific search words but given in a statement, "I want to buy good wine at Shinjuku." The place name extraction unit 14 decomposes into morphemes, and extracts the nouns, "Shinjuku" and "wine" at least, and then utilizes them as the search terms.

- 5 Next, the place name extraction unit 14 extracts a place name from the search terms. As an example of the way of extracting the place name, the extraction unit 14 refers to a place name table 26 that stores place name related information, and extracts a noun, here "Shinjuku," which corresponds to one of the place names in the table. The extracted place name "Shinjuku" is
- 10 forwarded to a place name selection unit 16. The place name selection unit 16 chooses from the place name table 26 some place names that are within a predefined area around "Shinjuku", and then forwards them to a query setting unit 18.

- [0042]** Fig. 3 shows an example of the internal data structure of the place
- 15 name table 26. A place name field 260 and a location field 262 are provided in this example, and the latter is expressed in the form (Loi, Lai) (i=1, 2, J) which indicates longitude and latitude, respectively. In the place name field 260, a sightseeing spot, such as "Tokyo Tower", the name of a structure, the name of a natural place, such as "Mt. Fuji," are filled as well as administrative divisions,
- 20 such as town, county, ward, city, or prefecture. In the location field 262, there are the standard locations of each place name, for example, a city hall or other administrative office, and the longitude and latitude of a central point or for the natural place. In any case, a rough central point may be used. Any

geographically unique point may be adopted, for example, the center of a rectangle circumscribing the area indicated by the place name.

**[0043]** Since the location of the region indicated by each of the place name is obtained from the place name table 26, the distance between the regions is determined. A region within 6 kilometers is determined as the zone for the user at a starting point. Therefore, the place name selection unit 16 chooses the places "Shibuya" and "Ikebukuro" as being within 6 kilometers from "Shinjuku".

**[0044]** The query setting unit 18 deals with the original place name "Shinjuku", and the place names "Shibuya" and "Ikebukuro" selected by the place name selection unit 16 as an acceptable zone for information retrieval, while utilizing the word "wine" for search information. Here, as an example, the query expression is set as "(Shinjuku OR Shibuya OR Ikebukuro) AND wine", and forwarded to search unit 20. The search unit 20 itself may be a search engine, or may have a control function for sending a search command to a search engine in a portal Web site. The search unit 20 may deal with a meta-search engine that exploits multiple search engines at the same time. In this case, the system can save the user a lot of labor and avoid a biased search in a single search engine. In any case, Web sites and their Web pages are searched under the above query expression via a communication unit 22, and then some matched Web pages are obtained at a search result unit 28 via the communication unit 22, and the result is displayed as a list in display 30. If the number of the matched pages exceeds a predefined threshold in the search

result unit 28, the query setting unit 18 is notified and a new search term may be added. In the above-mentioned example, the terms "store", "sales", or "good quality" could be added. Thus, in the example, a user can find a store that sells quality wine in Shibuya and Ikebukuro as well as Shinjuku.

5    **[0045]**    As another way of utilizing the personal information table 24, the search zone can be extended or narrowed according to the user's age. For instance, since user B is old, it can be assumed that he/she normally does not walk/travel a long distance for shopping. Therefore, the information may be searched within a narrowed zone. If it is taken into consideration that user B  
10    usually takes a bus from Shibuya, the place names along the regular route of the bus may be added as OR conditions in the query expression. For this purpose, the routes of trains and buses may be prepared and the information retrieval apparatus 10 may add areas along the route into a user's normal search zone, or alternatively, choose place names along the route as selected  
15    place names.

**[0046]**    Although user D is relatively old, but he/she travels mainly by car, the place names may be chosen according to or including the areas along the main road and added to his/her normal search zone. In this case, it is preferable that the starting or home address of user D is obtained. Even if he/she travels by  
20    car, there may be a high possibility that he/she should be within the region around his/her home, and therefore it is reasonable that the search zone should be defined taking this point into consideration.

[0047] Fig. 4 shows another example of a place name table 26. In this example, the place name table 26 stores a proximity relation between the regions indicated by the place names, particularly adjacent relationships. For example, some adjacent wards, such as "Shibuya, Nakano, Chiyoda," are filled in the adjacent place name field 264 corresponding to the place name "Shinjuku"; and other adjacent wards, such as "Osaka, Nara, Hyogo," are likewise filled corresponding to "Kyoto". The place name table 26 further has a distance classification field 266. A value is placed in this field, and the bigger the value is, the larger the scale of the regions in the adjacent relationships become; that is, the larger the distance between adjacent regions becomes. For instance, the distance classification is set to 0 for adjacent towns within the same ward, 1 for adjacent wards, and 2 for adjacent prefectures. By using the distance classification, the place name selection unit 16 can select the place name as follows:

1. Select "0" as the distance classification for users who go on foot so that only very closely adjoining towns are set as the search zone.
2. Select "0" or "1" as the distance classification for the aged, or select "2" for users who travel by car like user D.
3. Cancel the restriction on the distance for the areas along a train route that users usually take.

[0048] Fig. 5 shows yet another example of a place name table 26. In this example, the place name table 26 establishes an inclusive relation between regions as indicated by the place name. For instance, "Yokohama" in the place



name field 260 contains "China Town" and "Sakuragi Town" as within an inclusive region 268. Therefore, even if the user simply inputs "Yokohama" as the search term, it is not likely that "China Town" would be missed. Of course, a regional name, such as "Shinshu," may be used for the place name instead of towns or cities. A noted structure, a landmark, a noted place or other region-related things can be adopted as the name of the inclusive region.

**[0049]** Some alterations are now explained. Although the distance between regions is considered in Fig. 3, it may be replaced with transit time between regions. Namely, the travel time from one region to another by rail, bus, or air may be considered as a distance between regions and used to define the search zone.

**[0050]** Moreover, an area code or a postal code may be used for creating a place name table. Since these codes are numerical data, it is convenient in respect of system implementation.

**[0051]** Furthermore, although a town or a ward is a searchable unit in the above embodiment, a smaller region can be searched. In the above-mentioned embodiment, Shibuya-Ku, that is, the whole ward of Shibuya, may be searched under a query expression of "Shibuya" yet it may cause difficulty if the searched area is to be within walking distance. In such a case, the names of towns or places in the neighborhood, for instance, within some specified distance, may be obtained by using the latitude and longitude of a certain town in the ward of

Shibuya or the Shibuya train station, and these names may be used as OR conditions in the query expression so that a more detailed search can be conducted. This function may be implemented in the place name selection unit 16, for instance.

5   **[0052]**   Moreover, the search may be defined to be conducted by orders of proximity. For instance, a physical distance, such as within 100 meters, 300 meters, 500 meters, and so on, may be used and the search results may be shown in this order. Time duration, such as within 10 minutes, 20 minutes, and 30 minutes, or train or bus fare, such as within 200 yen and 500 yen, may also  
10   be used.

**[0053]**   After the classification using these kinds of distance metrics is executed as a front-end process, information relating to the closest region may be searched first, and after that, information relating to the next to closest region may be searched. In this configuration, all that users do is to wait until the  
15   desired information is searched. Therefore, users can avoid the problem of finding which result is in the closest region when the search results are shown all at once. In addition, some existing search engines cannot process an OR search with many key words. In this configuration, users can avoid this constraint in the search engines. This function may also be implemented in the  
20   place name selection unit 16.

**[0054]** Moreover, although the information retrieval apparatus 10 is depicted as a client apparatus residing at the user location, this apparatus may be configured as a server apparatus. For instance, the apparatus can be provided in a Web server that offers a search service to many clients, such as a home  
5 server or a server controlling a factory area. As such an example, if a Web server also serves as the information retrieval apparatus 10, the input unit 12 of Fig. 1 will receive a request sent by the user via the Internet or other networks and perform a sequence of the processes described above in the server.

**[0055]** As still another configuration, the information retrieval apparatus 10  
10 may be implemented as a client-server system. As an example, the input unit 12 and the place name extraction unit 14 may be provided at the client site, and the other function blocks may be provided at the server. As a matter of course, the function blocks in the configuration of Fig. 1 may be divided differently into a client site and a server site. The functional blocks can be  
15 appropriately divided when conditions, such as user convenience at the client site, the server load, the amount of communication data, are taken into consideration.

**[0056]** Fig. 6 shows a block diagram of an information retrieval system according to the second embodiment of the present invention. A user terminal  
20 2002, a search server 2004, and a Web server 2006 are connected via the Internet 2008. The user terminal 2002 accesses the search server 2004 and retrieves information offered by the Web server 2006. Fig. 7 is a block diagram

of user terminal 2002 and search server 2004. User terminal 2002 may be a personal computer, a portable terminal, such as a Personal Digital Assistant, or a mobile phone. The search server 2004 is preferably implemented using a normal computer and has a registration data reception unit 2020, a lifestyle or  
5 personal information storage unit 2022, a destination unit 2024, a search unit 2026, and a search result transmission unit 2028 as its function blocks.

[0057] Input unit 2010 of the user terminal 2002 receives items of personal information and information related to a destination input by a user. The registration data reception unit 2020 of the search server 2004 registers the  
10 input items of the personal information in the lifestyle information storage unit 2022. The items of the personal information have a regional relationship to the location of the user. For instance, the item may be a generic name of a public facility, such as a hospital, a school or a post office, or may be a specific name of a frequented store or a favorite restaurant. The destination unit 2024  
15 receives information related to the destination input by the user and provides that information to the search unit 2026. The information related to the destination is, for instance, an address, a postal code, or an area code of a telephone number. The search unit 2026 searches for regional information at the destination by using the items of the personal information stored in the  
20 personal information storage unit 2022. For example, the search unit 2026 searches information related to a store at the destination that is the same as the frequented one at the present location. The search unit 2026 may also search information related to a school or a hospital that is located near the destination.

The search result transmission unit 2028 transmits the retrieved information to the user terminal 2002. The user terminal 2002 stores the received information in storage unit 2014 and displays the information on a display unit 2012.

**[0058]** Fig. 8 depicts a screen of a user terminal 2002. A character or  
5 icon 2124 has an internal data file 2126 storing the items of personal  
information of the user. The data file 2126 is previously stored in the  
information storage unit 2022 of the search server 2004. The data file 2126  
has, for instance, an address field 2100, a frequented store field 2102, and a  
hospital field 2104 as shown in Fig. 9. A postal code is stored in the address  
10 field 2100. Some specific names of stores visited frequently by the user are  
stored as the items in the frequented store field 2102. The hospital field 2104  
stores some generic names, namely, dental and internal medicine in this  
example.

**[0059]** Referring to Fig. 8, when the user enters the postal code of the  
15 destination, to which the user is going to move, and clicks go button 2122, the  
character house icon 2128 that is an image of a site at the destination is  
displayed. When the user drags the character 2124 to the house icon 2128  
using a mouse, the character 2124 is registered at the new address of the  
destination, and then personal information at the new address is searched for  
20 each of the items stores in the data file 2126.

[0060] Fig. 10 depicts a search result for personal information at the new address. The first paragraph 2106 describes where a shop called "Fresh Hamburger" registered in the frequented store field 2102 in the data file 2126 is located near the new address. The user can refer to a map of the area around the shop by clicking a "look at the map" button. The second paragraph 2107 is a message explaining that a shop called "ABC" registered in the frequented store field 2102 was not found at the new address and the search server 2004 is now investigating what kind of store it is. In the third paragraph 2108, some clinics are recommended in respect to dental and internal medicine registered in the hospital field 2104. Thus, if the item registered in the data file 2126 is a specific name or a proper noun, the search server 2004 tells the user where a store or a hospital corresponding to the specific name is located at the new address. If the item is given as a generic name, a recommendable store or hospital is presented to the user.

[0061] The fourth paragraph 2110 is a message introducing "Drugstore AAA" as a recommendable drugstore at the new address. This message is provided to the user after the search server 2004 judges "ABC" is a name of a drugstore by searching a Web page corresponding to "ABC". The message is an HTML link as it is shown with an underline. By clicking on the link, the user can access the Web site of "Drugstore AAA" and check whether the recommended store offers a service similar to the frequented store at the old address. The fifth paragraph 2112 is a linked message inquiring of the user when the search

server 2004 cannot know what kind of store "ABC" is. When the user clicks the link, a screen is displayed for the user to enter information about "ABC".

**[0062]** Fig. 11 shows a flow chart of the information retrieval procedure of the search server 2004 having the above-mentioned configuration. The registration data reception unit 2020 registers the information items obtained from the user in personal information storage unit 2022 (S2010). The destination unit 2012 obtains the information related to the destination from the user (S2012). The search unit 2026 checks whether each of the registered items is a specific name or not (S2014). The personal information storage unit 2022 may have a list of generic names related to the personal information items, and search unit 2026 may judge whether the registered item is a specific name or a generic name using the list. If the item is a specific name (Y of S2014), the search unit 2026 searches for information corresponding to the specific name at the destination (S2016). If the search is successful (Y of S2016), the retrieved information is offered to the user (S2018). If the search is not successful (N of S2016), the search server 2004 inquires the user about a generic name of the item (S2020). Instead of inquiring about the generic name, a generic name selected by the search unit 2026 may be proposed to the user.

**[0063]** If the item is not a specific name but a generic name (N of S2014) or when the user gives a generic name at step S2020, the search unit 2026 searches the information at the destination corresponding to the generic name

(S2022). The search unit 2026 chooses recommendable information from the retrieved information and proposes it to the user (S2024).

**[0064]** According to the search server 2004 in this embodiment, when a user changes his/her location, the user can be provided with personal information at the new location in respect to the registered items. Particularly, if any of the registered items is given as a specific name, and there is no information corresponding to the specifically named item at the new location, the server inquires of the user whether a more general name should be used and then searches again for the information. For the item given as a generic name, some recommended information from the new location will be presented. Therefore, users can get lifestyle information easily and automatically when they move, by just simply entering information of the new location, and they can save a lot of searching effort.

**[0065]** The search server 2004 of the third embodiment of the present invention is different in its configuration and behavior from the second embodiment, while some features remain the same. Therefore only different points are described here. Fig. 12 shows a block diagram of the user terminal 2002 and the search server 2004. The search server 2004 includes a location unit 2034, a personal information unit 2032, a search history storage unit 2030, a personal information storage unit 2022, a search unit 2026, a destination unit 2024, and a search result transmission unit 2028. The location unit 2034 obtains information related to the user location from user



terminal 2002 and outputs the information to the personal information unit 2032. The search history storage unit 2030 creates a history file from information searched by the user on the Internet. The personal information unit 2032 extracts such information corresponding to the user's location from the search history of the user, and registers those items in the personal information storage unit 2022. For instance, information on a hospital, a beauty salon, or a drugstore at the present location of the user will be recorded. In this case, the specific name of the frequented store, or a place of medical treatment, such as dental or internal medicine, will be registered as an item of the lifestyle information.

**[0066]** The destination unit 2024 obtains from the user terminal 2002 information related to the destination of intended moving, travel, and so on, and outputs the information to the search unit 2026. The search unit 2026 searches for regional lifestyle information at the destination in respect to the items registered in the personal information storage unit 2022. The search result transmission unit 2028 transmits the search results to the user terminal 2002.

**[0067]** According to the search server 2004 in this embodiment, since the items of lifestyle information of users are extracted from the history file of the users registered beforehand, even if the location changes, a user can be provided with lifestyle information at the new location in respect to the registered items, by just simply entering information of the new location.

**[0068]** In the fourth embodiment of the present invention, the search history storage unit 2030, lifestyle information unit 2032, and the personal information storage unit 2022 of the search server 2004 of the third embodiment are implemented in the user terminal 2002. The user terminal 2002 stores the search history of the user in history unit 2030, and extracts items of lifestyle information and registers the items in the personal information storage unit 2022. When the user terminal 2002 receives an input of a new destination from the user, it transmits the destination and the lifestyle information items to the search server 2004 as a query expression so that terminal 2002 can receive from the search server 2004 a search result of lifestyle information at the new destination. The personal information storage unit 2022 of the terminal 2002 may be configured as an address book or a memo as it is common in a PDA terminal. Fig. 13 shows a display in the user terminal 2002. It displays regional lifestyle information at the new user location, such as an elementary school, pediatric, internal medicine, a general hospital, taxi, and dining. For each item, information specific to the new location is registered. The underline indicates that it is an HTML link. The user can access to a corresponding Web page by clicking the link.

**[0069]** According to the user terminal 2002 in this embodiment, since lifestyle information is extracted from the search history and a list of items of the lifestyle information is generated, the user terminal 2002 can search lifestyle information on each item in the Internet and register the searched information. Whenever

the user changes his location, lifestyle information corresponding to the new location is searched again and registered.

**[0070]** Some alterations are now explained. Although personal or lifestyle information at the destination is searched based on the items of information in the above-mentioned embodiments, personal attributes of the user, such as age, sex, preference, and hobbies may also be pre-registered and the information may be searched based on these personal attributes. In this case, the user can obtain lifestyle information fit to his/her personal preferences or interests by simply entering the destination of travel on business or on vacation. Therefore, for instance, the user can find a favorite restaurant before he/she travels, or find a nearby clinic when he/she goes on business.

**[0071]** In the above explanation, the user location and the destination are given by inputting an address or a postal code. If the user stays at the location or the destination, the current position data received from a GPS satellite or the current position data detected by a base station of a mobile phone or a PHS that the user has may be used as the position data of the user location or the destination.

**[0072]** Although the present invention has been described by way of exemplary embodiments, it should be understood that those skilled in the art might make many changes and substitutions without departing from the spirit and scope of the present invention that is defined by the appended claims.